

Notice of Allowability

Application No.

09/994,974

Examiner

DEVONA E. FAULK

Applicant(s)

GREENBERG ET AL.

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 8/1/2006.
2. ☒ The allowed claim(s) is/are 7-9.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
- ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- ☐ Notice of Informal Patent Application
- ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
- ☒ Examiner's Amendment/Comment
- ☒ Examiner's Statement of Reasons for Allowance
- ☐ Other _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 8/1/2006 have been fully considered but they are not persuasive. The applicant agreed to cancel claims 2-3 to place the case in allowable form.
2. Claims 7-9 were indicated as allowable in the previous office action and remain in allowable form.
3. The applicant filed a terminal disclaimer on 8/1/2006 but the examiner noticed that the incorrect patent number was listed. The applicant filed a subsequent terminal disclaimer on 4/28/2008 which replaces the first terminal disclaimer. The first terminal disclaimer is now void. The applicant should not be assessed or charged since the first fee is applied to the second terminal disclaimer.

EXAMINER'S AMENDMENT

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jerome R. Drouillard (Reg. No. 28,808) on 4/21/2008.

The claims are to be amended as follows:

Claims 2 and 3: CANCEL.

5. Claims 7-9 are allowed.

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6. The following is an examiner's statement of reasons for allowance: Regarding claim 9, prior art Saida (US 4,061,116) discloses a knock level control apparatus and method comprising a microphone 12 for producing a microphone signal, amplifier 16, band pass filters 20, and peak follower 24 for producing an excitation signal indicative of the acoustic activity in the engine, identifying an impulsive sound activity as a function of time, producing a detection signal, processing the detection signal to identify an audible impulsive sound and characterizing the sound for controlling the ignition timing of the engine (element 92). Prior art Utsumi (4,429,565) discloses a knocking detecting apparatus comprising knock sensor 1, input circuit 2 and knocking discrimination level generator circuit 3 which produces a knocking level based on the level heard by the human ear (see column 1). Thus, Utsumi teaches processing the microphone signal in a psychoacoustic method. The art generally teaches of noise detection.

Regarding claim 9, the prior art or combination thereof fails to disclose or make obvious processing the bandpass signals to produce the excitation signal indicative of the estimated acoustic activity by extracting an envelope signal indicative of the waveform envelope for each of the bandpass signals, converting the envelope signal for each of the bandpass signals to an excitation level used in the human auditory system; and temporal masking the converted envelope signal for each of the bandpass signals; producing an excitation signal indicative of the estimated acoustic activity; processing the excitation signal to identify each impulsive sound frequency- dependent activity as a function of time by compressing the temporal masked converted envelope signal for each of the bandpass signals, detecting impulses of the temporal mask converted

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envelope signal for each of the bandpass signals, calculating the magnitudes of the detected impulses for each of the bandpass signals, normalizing the calculated impulse magnitudes for each of the bandpass signals, and thresholding the normalized impulse magnitudes for each of the bandpass signals.

Therefore the prior art or combination thereof fails to disclose or make obvious a method and implementation for detecting and characterizing audible transients in noise as claimed.

Claims 7 and 8 are allowed due to dependency on claim 9.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVONA E. FAULK whose telephone number is (571)272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devona E. Faulk/
Examiner, Art Unit 2615

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2615